

## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

### Listing of Claims:

- 1           1.       (Currently amended) A method for manipulating a window within  
2       a three-dimensional (3D) display model, comprising:  
3           receiving an input from a 2D pointing device, wherein the input specifies a  
4       2D offset within a 2D display, wherein the 2D display provides a view into the 3D  
5       display model;  
6           using the 2D offset to move a cursor to a position in the 2D display;  
7           determining if the cursor overlaps a window within the 3D display model;  
8           if the cursor overlaps a window,  
9                   determining a 2D position of the cursor with respect to a  
10          2D coordinate system for the window, and  
11           communicating the 2D position to an application associated  
12          with the window to enable a user of the 2D pointing device to  
13          interact with the application; and  
14          displaying the window as a 3D object; wherein when the window is  
15       rotated, a spine located on a side edge of the window becomes visible, wherein the  
16       spine contains ~~identification information~~ a title for the same window, and wherein  
17       the thickness of the spine is significantly less than the dimension of the window.
- 1           2.       (Original) The method of claim 1, wherein determining if the  
2       cursor overlaps a window within the 3D display model involves:

3 projecting a ray from a predefined viewpoint in the 3D display model  
4 through the cursor, which is located in a rectangle representing the 2D display in  
5 the 3D display model, toward one or more windows in the 3D display model; and  
6 determining if the ray intersects a window.

1 3. (Original) The method of claim 2, wherein determining the 2D  
2 position of the cursor with respect to the 2D coordinate system of the window  
3 involves:  
4 determining a 3D position where the ray intersects the window within the  
5 3D display model; and  
6 transforming the 3D position in the 3D display model into a 2D position  
7 with respect to the 2D coordinate system for the window based upon the size,  
8 position and orientation of the window within the 3D display model.

1 4. (Original) The method of claim 3, wherein the size, position and  
2 orientation of the window within the 3D display model are specified by a number  
3 of attributes of the window, including:  
4 a height;  
5 a width;  
6 an x-position;  
7 a y-position;  
8 a z-position;  
9 a first rotation around a vertical axis of the window; and  
10 a second rotation around a horizontal axis of the window.

1 5. (Original) The method of claim 1, further comprising:  
2 receiving a second input from the 2D pointing device; and

3 in response to the second input, changing a viewing angle for the 3D  
4 display model by rotating objects within the 3D display model around a  
5 predefined viewpoint.

1 6. (Original) The method of claim 1, wherein if the cursor overlaps a  
2 given window, the given window becomes a selected window and appears opaque  
3 while other windows within the 3D display model appear translucent.

1 7. (Original) The method of claim 1, wherein if a command is  
2 received to minimize a window, the window minimization operation is illustrated  
3 as an animation that moves the window toward a minimized position near a  
4 border of the 2D display while reducing the size of the window to its minimized  
5 size.

1 8. (Original) The method of claim 1, wherein if a command is  
2 received to close a window, the window closing operation is illustrated as an  
3 animation that throws the window away by moving the window toward the  
4 background of the 3D display model and causing the window to fade away.

1 9. (Original) The method of claim 1, wherein if a command is  
2 received to rotate all windows in the 3D display model, the method further  
3 comprises rotating all windows in the 3D display model, so that windows are  
4 viewed from an oblique angle through the 2D display, whereby the contents of the  
5 windows remain visible, while the windows occupy less space in the 2D display  
6 and are less likely to overlap each other.

1 10. (Cancelled)

1           11.     (Original) The method of claim 9, wherein when a user selects one  
2     of the rotated windows, the method further comprises:  
3           moving the selected window in front of the other windows;  
4           unrotating the selected window so it faces the user; and  
5           moving the other windows back to their original positions and  
6     orientations.

1           12.     (Original) The method of claim 1, wherein the 2D pointing device  
2     can include:  
3           a mouse;  
4           a track ball;  
5           a joystick; and  
6           a glide point.

1           13.     (Currently amended) A computer-readable storage medium storing  
2     instructions that when executed by a computer cause the computer to perform a  
3     method for manipulating a two-dimensional (2D) window within a three-  
4     dimensional (3D) display model, the method comprising:  
5           receiving an input from a 2D pointing device, wherein the input specifies a  
6     2D offset within a 2D display, wherein the 2D display provides a view into the 3D  
7     display model;  
8           using the 2D offset to move a cursor to a position in the 2D display;  
9           determining if the cursor overlaps a window within the 3D display model;  
10          if the cursor overlaps a window,  
11                  determining a 2D position of the cursor with respect to a  
12                  2D coordinate system for the window, and

13                   communicating the 2D position to an application associated  
14                   with the window to enable a user of the 2D pointing device to  
15                   interact with the application; and  
16                   displaying the window as a 3D object; wherein when the window is  
17                   rotated, a spine located on a side edge of the window becomes visible, wherein the  
18                   spine contains ~~identification information~~ a title for the same window, and wherein  
19                   the thickness of the spine is significantly less than the dimension of the window.

1                   14.     (Original) The computer-readable storage medium of claim 13,  
2                   wherein determining if the cursor overlaps a window within the 3D display model  
3                   involves:  
4                   projecting a ray from a predefined viewpoint in the 3D display model  
5                   through the cursor, which is located in a rectangle representing the 2D display in  
6                   the 3D display model, toward one or more windows in the 3D display model; and  
7                   determining if the ray intersects a window.

1                   15.     (Original) The computer-readable storage medium of claim 14,  
2                   wherein determining the 2D position of the cursor with respect to the 2D  
3                   coordinate system of the window involves:  
4                   determining a 3D position where the ray intersects the window within the  
5                   3D display model; and  
6                   transforming the 3D position in the 3D display model into a 2D position  
7                   with respect to the 2D coordinate system for the window based upon the size,  
8                   position and orientation of the window within the 3D display model.

1                   16.     (Original) The computer-readable storage medium of claim 15,  
2                   wherein the size, position and orientation of the window within the 3D display  
3                   model are specified by a number of attributes of the window, including:

4 a height;  
5 a width;  
6 an x-position;  
7 a y-position;  
8 a z-position;  
9 a first rotation around a vertical axis of the window; and  
10 a second rotation around a horizontal axis of the window.

1 17. (Original) The computer-readable storage medium of claim 13,  
2 wherein the method further comprises:  
3 receiving a second input from the 2D pointing device; and  
4 in response to the second input, changing a viewing angle for the 3D  
5 display model by rotating objects within the 3D display model around a  
6 predefined viewpoint.

1 18. (Original) The computer-readable storage medium of claim 13,  
2 wherein if the cursor overlaps a given window, the given window becomes a  
3 selected window and appears opaque while other windows within the 3D display  
4 model appear translucent.

1 19. (Original) The computer-readable storage medium of claim 13,  
2 wherein if a command is received to minimize a window, the window  
3 minimization operation is illustrated as an animation that moves the window  
4 toward a minimized position near a border of the 2D display while reducing the  
5 size of the window to its minimized size.

1 20. (Original) The computer-readable storage medium of claim 13,  
2 wherein if a command is received to close a window, the window closing

3 operation is illustrated as an animation that throws the window away by moving  
4 the window toward the background of the 3D display model and causing the  
5 window to fade away.

1 21. (Original) The computer-readable storage medium of claim 13,  
2 wherein if a command is received to rotate all windows in the 3D display model,  
3 the method further comprises rotating all windows in the 3D display model, so  
4 that windows are viewed from an oblique angle, whereby the contents of the  
5 windows remain visible, while the windows occupy less space in the 2D display  
6 and are less likely to overlap each other.

1 22. (Cancelled)

1 23. (Original) The computer-readable storage medium of claim 21,  
2 wherein when a user selects one of the rotated windows, the method further  
3 comprises:  
4 moving the selected window in front of the other windows;  
5 unrotating the selected window so it faces the user; and  
6 moving the other windows back to their original positions and  
7 orientations.

1 24. (Original) The computer-readable storage medium of claim 13,  
2 wherein the 2D pointing device can include:  
3 a mouse;  
4 a track ball;  
5 a joystick; and  
6 a glide point.

1           25.     (Currently amended) An apparatus that manipulates a two-  
2 dimensional (2D) window within a three-dimensional (3D) display model,  
3 comprising:  
4           an input mechanism configured to receive an input from a 2D pointing  
5 device, wherein the input specifies a 2D offset within a 2D display, wherein the  
6 2D display provides a view into the 3D display model;  
7           a cursor mechanism configured to use the 2D offset to move a cursor to a  
8 position in the 2D display;  
9           a window manipulation mechanism configured to determine if the cursor  
10 overlaps a window within the 3D display model;  
11           wherein if the cursor overlaps a window, the window manipulation  
12 mechanism is configured to,  
13                 determine a 2D position of the cursor with respect to a 2D  
14                 coordinate system for the window, and to  
15                 communicate the 2D position to an application associated  
16                 with the window to enable a user of the 2D pointing device to  
17                 interact with the application; and  
18           a display mechanism configured to display the window as a 3D object;  
19 wherein when the window is rotated, a spine located on a side edge of the window  
20 becomes visible, wherein the spine contains ~~identification information~~ a title for  
21 the same window, and wherein the thickness of the spine is significantly less than  
22 the dimension of the window.

1           26.     (Original) The apparatus of claim 25, wherein while determining if  
2 the cursor overlaps a window within the 3D display model, the window  
3 manipulation mechanism is configured to:



4 project a ray from a predefined viewpoint in the 3D display model through  
5 the cursor, which is located in a rectangle representing the 2D display in the 3D  
6 display model, toward one or more windows in the 3D display model; and to  
7 determine if the ray intersects a window.

1 27. (Original) The apparatus of claim 26, wherein while determining  
2 the 2D position of the cursor with respect to the 2D coordinate system of the  
3 window, the window manipulation mechanism is configured to:  
4 determine a 3D position where the ray intersects the window within the 3D  
5 display model; and to  
6 transform the 3D position in the 3D display model into a 2D position with  
7 respect to the 2D coordinate system for the window based upon the size, position  
8 and orientation of the window within the 3D display model.

1 28. (Original) The apparatus of claim 27, wherein the size, position  
2 and orientation of the window within the 3D display model are specified by a  
3 number of attributes of the window, including:  
4 a height;  
5 a width;  
6 an x-position;  
7 a y-position;  
8 a z-position;  
9 a first rotation around a vertical axis of the window; and  
10 a second rotation around a horizontal axis of the window.

1 29. (Original) The apparatus of claim 25, further comprising a viewing  
2 angle changing mechanism configured to:  
3 receive a second input from the 2D pointing device; and

4 in response to the second input, to change a viewing angle for the 3D  
5 display model by rotating objects within the 3D display model around a  
6 predefined viewpoint.

1 30. (Original) The apparatus of claim 25, wherein if the cursor  
2 overlaps a given window, the window manipulation mechanism is configured to  
3 make the given a selected window that appears opaque while other windows  
4 within the 3D display model appear translucent.

1 31. (Original) The apparatus of claim 25, wherein if a command is  
2 received to minimize a window, the window manipulation mechanism is  
3 configured to illustrate the minimization operation as an animation that moves the  
4 window toward a minimized position near a border of the 2D display while  
5 reducing the size of the window to its minimized size.

1 32. (Original) The apparatus of claim 25, wherein if a command is  
2 received to close a window, the window manipulation mechanism is configured to  
3 illustrate the window closing operation as an animation that throws the window  
4 away by moving the window toward the background of the 3D display model and  
5 causing the window to fade away.

1 33. (Original) The apparatus of claim 25, wherein if a command is  
2 received to rotate all windows in the 3D display model, the window manipulation  
3 mechanism is configured to rotate all windows in the 3D display model, so that  
4 windows are viewed from an oblique angle through the 2D display, whereby the  
5 contents of the windows remain visible, while the windows occupy less space in  
6 the 2D display and are less likely to overlap each other.

1           34.     (Cancelled)

1           35.     (Original) The apparatus of claim 33, wherein when a user selects  
2 one of the rotated windows, the window manipulation mechanism is configured  
3 to:  
4           move the selected window in front of the other windows;  
5           unrotate the selected window so it faces the user; and to  
6           move the other windows back to their original positions and orientations.

1           36.     (Original) The apparatus of claim 25, wherein the 2D pointing  
2 device can include:  
3           a mouse;  
4           a track ball;  
5           a joystick; and  
6           a glide point.

1           37.     (Currently amended) A means for manipulating a two-dimensional  
2 (2D) window within a three-dimensional (3D) display model, comprising:  
3           an input means for receiving an input from a 2D pointing device, wherein  
4 the input specifies a 2D offset within a 2D display, wherein the 2D display  
5 provides a view into the 3D display model;  
6           a cursor means configured to use the 2D offset to move a cursor to a  
7 position in the 2D display;  
8           a window manipulation means configured to determine if the cursor  
9 overlaps a window within the 3D display model;  
10          wherein if the cursor overlaps a window, the window manipulation means  
11 is configured to,

12                               determine a 2D position of the cursor with respect to a 2D  
13                               coordinate system for the window, and to  
14                               communicate the 2D position to an application associated  
15                               with the window to enable a user of the 2D pointing device to  
16                               interact with the application; and  
17                               a display means for displaying the window as a 3D object; wherein when  
18       the window is rotated, a spine located on a side edge of the window becomes  
19       visible, wherein the spine contains ~~identification information~~ a title for the same  
20       window, and wherein the thickness of the spine is significantly less than the  
21       dimension of the window.